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Iran's Flourishing Regional Influence: Electricity Exports as a Loophole to Sanctions

Shabnam Mirsaedi-Glossner

IN October 2012 Iran signed an agreement to export electricity to both Pakistan and India. Although faced with harsh threats from the United States, the Pakistani government has embraced this path and agreed to the construction of an Iran-Pakistan pipeline.¹ This agreement is the newest in a line of electricity export agreements Iran already holds with Afghanistan, Armenia, Iraq, Syria, and Turkey while facing the austere sanctions from the West related to Iran's nuclear activities. Iran has pursued the expansion of its electricity capacity in the past decade to meet growing domestic demand as well as opportunities to export regionally. Iran is building long-term relations that cannot be as easily sanctioned as crude oil or natural gas exports by investing significantly in transmission lines across borders. Already, Iranian electricity exports have increased by more than 45 percent in 2012 compared with the previous year.² This strategy highlights Iran's effort to manifest itself as a prominent regional player and increase its neighbors' dependencies on its energy sector.

The consequences of Iran's regional strategy are threefold: First, Iran is not entirely dependent on European energy projects. Second, the European and U.S. policies of isolating Iran are likely to be undermined by a region dependent on Iran.

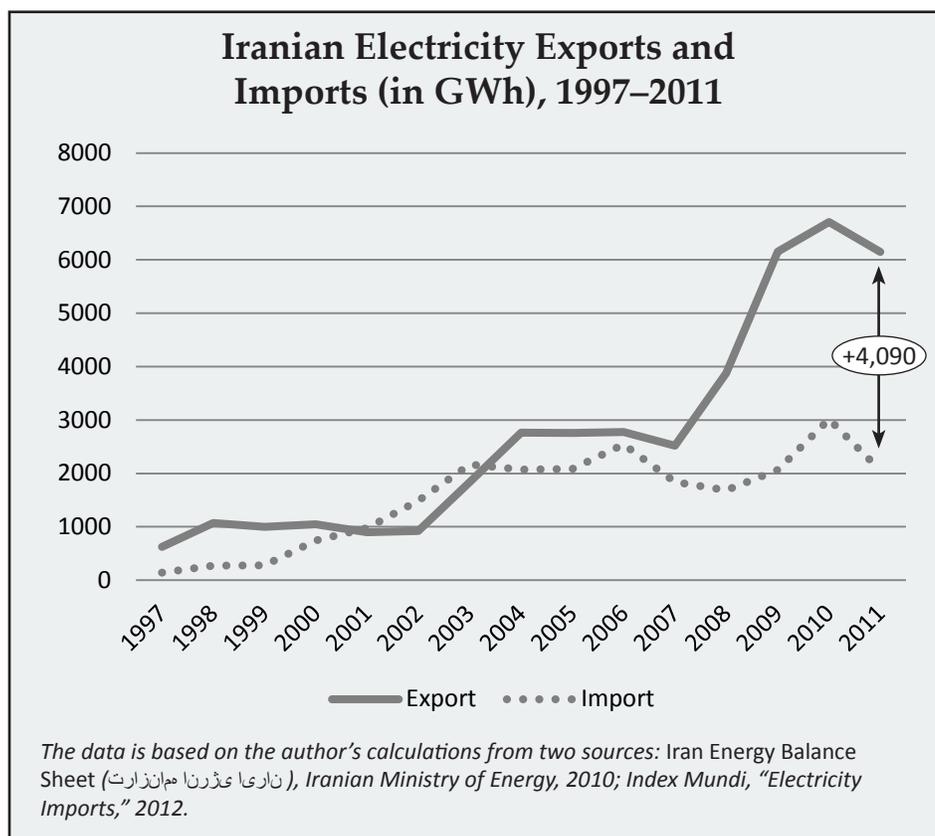
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Third, the geopolitical consequences of an Iranian regional power can contribute to the fragility of European and U.S. strategies in Eurasia.

Changes in Iran's Electricity Sector

Much attention has been given to Iran's energy reserves, which constitute approximately 9 percent of the world's proven oil reserves and about 16 percent of the proven natural gas reserves.³ Little, however, has been written about the strategic nature of Iran's electricity sector, which reaches far beyond domestic objectives into underlying foreign policy aspirations. This change has been driven openly by structural, technological, and economic changes since the mid-2000s.

Since 2007, Iran's net electricity trade surplus has increased more than sixfold. In spite of growing domestic demand, the restructuring of the electricity sector and increased overall electricity capacities in Iran led to a significant increase in the overall electricity generation in the country and has underpinned Iran's goal of using the electricity sector to substantiate its regional power.



By September 2012, Iran had increased its net electricity exports to a total of 5,290 gigawatt-hours (GWh).⁴ According to Isfahan Saman Energy, an Iranian engineering company, if Iran's electricity export continues to grow at the same pace as in previous years, Iran could provide more than 16 percent of total needed electricity in the Middle East and North Africa region by 2014.⁵

Currently, more than 70 percent of the electricity generated in Iran is produced by natural gas. While Iran has the second-largest natural gas reserves worldwide, the increase in domestic consumption and the limited domestic production capacity create challenges for growing export demands. In an effort to permit greater export capacities, the Iranian government has addressed generation and transmission capacities and attempted to curb domestic demand and encourage energy efficiency.

Iran's growth in domestic electricity consumption is considered one of the highest worldwide. It has increased from 88.6 billion kilowatt-hours (kWh) in 2000 to 206.7 billion kWh in 2011—a compound annual growth rate of approximately 8 percent.⁶ In 2010 alone, the country produced 233.0 billion kWh of electricity.⁷ Privatization has most prominently affected the domestic structure of the Iranian electricity market. Currently, four hundred power plants and almost forty electricity distribution companies operate in Iran.⁸ One of the fundamental ideas behind the privatization of power plants is for faster growth of overall electricity generation capacity to help keep up with consumption and exports. The Iranian third economic, social, and cultural development plan (2000–2004) called for a larger role for the private sector, specifically in the electricity sector.⁹ After one year, private actors generated approximately 3 percent of the total power plant capacity of Iran (a total of 26,000 MW, excluding large industry). Between 2000 and 2010, the overall electricity generation capacity (nominal capacity) in the country increased at an average annual growth rate of 7 percent.¹⁰ Ten years later, by 2010, approximately 10 percent of total nominal capacity (more than 5,000 megawatts [MW] compared with the total of 50,000 MW) was generated by private power plants.¹¹ This share has further increased in the past two years.¹²

Iran's electricity generation has gained significantly in efficiency since 2004 through the expansion of combined cycle power plants, which use natural gas along with other supplementary fuels like coal. These plants are considerably more efficient (60 percent efficiency compared with around 30 percent for single cycle plants) and have fundamentally contributed to the increase in electricity generation. With more of these power plants, the share of Iran's single cycle gas power plants has been reduced to 29 percent of the total nominal capacity in 2009 compared with their peak of 42 percent in 2003.¹³ While other energy sources currently have little influence, Iran has set renewable energy targets, as described in the fourth five-year economic, social, and cultural development plan (2005–2009), of 707.75 MW of electricity generation, primarily from wind and small hydropower sources but also from biomass, geothermal, solar thermal, photovoltaic, and fuel cells.¹⁴

The growth in electricity exports is largely attributed to the capacities of Iran's South Pars field at the Persian Gulf, which have been developed as high-priority projects since the mid-1990s. According to the fifth development plan (2010–2014), the country seeks to increase its natural gas export capacities within the next three years to 100 million cubic meters a day, almost four times as much as today.¹⁵ To meet

export as well as domestic demands, the country seeks to increase its capabilities from 540 million cubic meters a day (2012) to more than 1 billion cubic meters by 2015. Today, most of the gas from South Pars is used for domestic consumption. However, with the newest Western sanctions against the gas and oil sector, foreign investments no longer come to the area, which underlines a fundamental challenge to meeting Iran's gas export objectives.¹⁶ In light of the difficulties of exporting natural gas to neighboring countries, the electricity capacity of South Pars has been stepped up. A first project was completed in 2009, and by 2010 the construction of six gas turbines with a nominal capacity of 1,000 MW was awarded to MAPNA (Power Plant Projects Management Company), a leading Iranian industrial group.¹⁷ The power plants are connected to the trans-Iranian network and will contribute substantially in the long term to electricity generation in the country—as well as electricity export.

During the Iran-Iraq War (1980–1988), Iran's electricity grid and capacities were substantially damaged. The approved budgetary law of 1990 designated US\$1.8 million for reconstruction projects, including building supplies, transportation, and gas distribution networks.¹⁸ Furthermore, US\$100 million was allocated to the Ministry of Petroleum for investments in gas pipeline expansion in the country.¹⁹ In case of a foreign exchange surplus, the government would invest another US\$100 million in rural development, specifically in electricity grids, transportation routes, and infrastructure projects.²⁰ Additional annual funds were designated in the following years to expand the electricity grid, water services, and the transportation sector for rural areas.²¹ In the budgetary law, passed in 1991, the central bank was given permission to allocate an additional US\$20 billion in foreign exchange income—once generated—to projects in the development of the electricity sector.²² Specific permission for budgetary requests was given to the Tavanir Holding Company and its subsidiary in rural areas to accelerate and facilitate all infrastructure projects in the electricity sector.^{23, 24} Similar provisions over the next few years set aside significant sums to invest in and expand electricity grids. These were important policies in ensuring greater grid capacity, length, and coverage.

At the same time that policies were put in place to support electricity generation and transmission, other policies were instituted to curb the growing domestic demand in the long run to allow for more significant electricity exports to neighboring countries. These policies include a five-year reduction of electricity price subsidies starting in December 2010.^{25, 26} In 2000, subsidies made up 81 percent of the average annual electricity prices in the residential sector, 66 percent in the public sector, 94 percent in the agriculture sector, and 47 percent in the industrial sector. Even as total actual electricity costs increased by 8 to 10 percent annually from 2000 to 2010, the share of subsidies remained substantial: 75 percent in the residential sector, 56 percent in the public sector, 91 percent in the agricultural sector, and 45 percent in the industrial sector. The average household price of

electricity was 48 rial per kWh in 2000 and 118 rial per kWh in 2010 before the subsidy reform (at 2000 constant rial).²⁷ In the first phase of the subsidy reform implemented in December 2010, the average electricity prices for households went up to 360 rial per kWh—more than three times the pre-reform price in 2010 and almost eight times the kWh price in 2000. The price increase served its purpose: consumption subsequently decreased by 11 percent in January 2011.²⁸ By 2015 the household price will be increased to 1,000 rial, approximately 55 percent of the anticipated average actual electricity cost.²⁹

Turning East: Iran's Geopolitical Game as the International Community Hardens Sanctions

The sanctions on Iran's energy sector have recently intensified, highlighting the success of the policies over the past five to ten years as Iran looks for new energy trade partners. The European sanctions in 2012, imposed in two phases, targeted Iran's energy sector in an effort to undermine government revenue. Effective July 1, 2012, the European Union (EU) prohibited all imports of Iranian oil and petrochemical products. In October 2012, the EU extended its sanctions to the financial sector and remaining parts of the energy sector. As a result, more than thirty additional Iranian companies were banned from European trade relations, and imports from natural gas were prohibited.

This resulted in negative consequences for the EU because, in recent years, Iran has been considered as an alternative to Russia for European energy security. The Caspian Sea region and the Persian Gulf hold some of the most significant oil and natural gas reserves worldwide, and Iran is the only country straddling both of these areas, making it ideally situated for energy trade. In 2009 and 2010, Iran negotiated participation in the Nabucco pipeline project, maintaining that Iran's gas reserves were fundamental to achieve the intended annual supply capacity of thirty billion cubic meters from Asia to Europe.³⁰ The European-driven consortium originally sought to develop an alternative to the Russian gas supply from the Caspian Sea through Turkey, Bulgaria, Romania, Hungary, and Austria, possibly by using Iranian gas sources. Previously issued U.S. sanctions, as well as the more recent EU sanctions, however, have put significant hurdles on Iranian participation in the original Nabucco plans. Though the Nabucco project also faces other issues, the prospect of achieving its supply capacity without Iranian gas reserves has been highly questioned. Alternatives to Nabucco, including Nabucco West and projects in the Southern Gas Corridor, such as the Trans-Anatolian Gas Pipeline and Trans-Adriatic Pipeline, have served to further demonstrate the limits of any project that lacks Iranian gas sources and in so doing have strengthened the Russian pipeline strategy.³¹ This is both a loss for Europe's realization of an alternative to Russian gas and for Iran's access to European markets. The electricity market has thus proven

to be a more fruitful opportunity as an outlet for Iran's natural gas, strengthening Iran's strategic positioning.

Since the mid-2000s, the West has become an increasingly difficult trade partner for Iran. The 2012 sanctions have greatly diminished trade between the EU and Iran, which consisted primarily of Iranian-exported energy or energy-related goods³² (worth more than 13 billion euros in 2010 versus 4.6 billion euros in 2012) and EU-exported machinery, chemicals, and manufactured goods³³ (worth more than 10 billion euros in 2010 versus 6.1 billion euros in 2012).³⁴ With entry to European markets shuttered, opportunities within the Middle East and central Asia became more attractive for Iran. Systemic regional changes presented new challenges but also new opportunities. The altered geopolitical reality Iran faced in its west due to a ceasefire with Iraq in 1988 and the expanded U.S. military presence in the Middle East after Operation Desert Storm in 1991 required a new regional approach if Iran wanted to maintain and extend its regional influence.³⁵

Armenia, Azerbaijan, and Turkmenistan

When the Iran-Iraq border was no longer an option for trade or transportation routes in the 1990s, the emergence of four new countries with the dissolution of the Soviet Union at Iran's northern border around the Caspian Sea facilitated relationships. Iran viewed the South Caucasus as a zone historically influenced by Iran and one that could be regained. Iran's strained relations with Azerbaijan contributed to a closer relationship between Armenia and Iran in the 1990s. Since 2006, Iran has invested through the Iranian Export Development Bank in the renewal of the two existing and one new power transmission line between Armenia and Iran. The two countries have cooperated on the construction of hydroelectricity plants on the Aras River on their border. The agreement between the two countries stipulates natural gas deliveries from Armenia to northern Iran in exchange for electricity imports from Iran.³⁶ Similar swap agreements were developed with Turkmenistan and Azerbaijan. Particularly for Turkmenistan, which does not have access to an open sea or pipelines leading to Europe, good relations with Iran are crucial to gain access to the Persian Gulf.

Turkey

Within the traditional regional rivalry between Turkey and Iran, Turkey's lack of energy sources has created a strong incentive for economic cooperation. Cooperation between the two countries increased in the beginning of the twenty-first century, reaching almost US\$12.5 billion in export value in 2012, compared with only US\$2 billion in 2004.^{37, 38} According to the Iranian energy minister, completion of a new electricity transfer line in northern Iran boosted exports to Turkey to 400 MW per hour by the end of May 2012 from 190 MW per hour.³⁹ Based on Turkey's total electricity imports (5.8 billion kWh), Iran could have very

well provided approximately 13 percent of these imports in 2012.⁴⁰ Furthermore, Turkey is still highly dependent on Iranian crude oil and natural gas imports. Iran supplied 51 percent of Turkey's crude oil needs in 2011 and was still the top supplier by September 2012 (44 percent of crude oil supplies).⁴¹ Iran was the second-largest natural gas supplier for Turkey (19 percent) in 2011 and 2012 through the Tabriz–Dogubayazit pipeline originating in Iran. The sanctions have lessened Turkish demand for Iranian crude oil and natural gas, but a complete substitution is not yet available.

Pakistan

A similar pattern can be observed in Iran's relations with Pakistan. Economic relations between the two countries have intensified since the U.S.-led invasion of Afghanistan in 2001. Within this relationship, energy cooperation has been instrumental. Although plans for the "peace pipeline" bringing Iranian natural gas from South Pars to Pakistan and India were developed in the mid-twentieth century, actual steps forward did not occur until after the turn of the century. While the Iranian route is almost complete, no progress has been achieved on the construction of the Pakistani section. In 2008, India bowed to U.S. pressure to end cooperation on such a pipeline from Iran. Pakistan, however, has continued collaboration with Iran, notably in the electricity sector. In 2009, Iran and Pakistan signed a memorandum of understanding for the construction of a 170 km transmission line from Iran to Pakistan and the provision of initially 1,000 MW of electricity. Tehran has agreed to invest US\$50 million in this project. Under the proposed project, Iran will build a power plant in Zahedan Province, which borders Pakistan, to generate electricity for export and has also expressed its willingness to provide US\$800 million to US\$900 million to complete the project. Expanding on the 2009 memorandum of understanding, Iran seeks to export 10,000 MW to Pakistan in the next few years.⁴² This vision will be combined with a 6,000 MW export value memorandum signed with India in October 2012, in which Iran agreed to deliver 6,000 MW through Pakistan to India (2,000 MW will be kept by Pakistan and 4,000 MW will be delivered to India).⁴³ By the end of March 2013, Pakistan owed US\$51 million for Iran's electricity exports. Without this electricity, however, Pakistan would face even more power outages and therefore asked Iran if it could pay part of its debt with wheat and rice exports.⁴⁴

Iraq

After the U.S.-led invasion of Iraq in 2003, Iran seized opportunities to increase its influence in its neighboring country. Iran has started more significant electricity exports to the Wasit Province in Iraq. The region receives limited electricity from the main national Iraqi grid and has been marked by blackouts. The transmission amounted to approximately 450 MW by mid-2011 and reached 1,139 MW by mid-2012.⁴⁵ Without this supply, power shortages would be of even greater concern in the region. The cooperation with Iraq has also been used to set up a transmission

line from Iran through Iraq to Syria. According to an agreement signed in mid-2012, Iran seeks to export 50 MW in its first phase to Syria, with the goal set at 200 MW. Within this project Iranian companies will build power plants and transmission lines in Syria. The minister of energy has openly stated that these projects are currently small and not profitable but are of strategic importance to Iran and its electricity sector.⁴⁶

Afghanistan and Tajikistan

Iran is exporting an average of 30 MW of electricity to Afghanistan.⁴⁷ Iran is a key supplier of electricity in the Afghan provinces of Zabul and Nimroz. During a cutoff in 2011, due to Iranian domestic shortages, Nimroz was not able to receive any power from other sources, relying completely on Iranian supply.⁴⁸ While Afghanistan has been considering the construction of other power supplies, these have not been constructed yet.

In an effort to expand its pivotal role, Iran signed an agreement with Afghanistan and Tajikistan in 2012 in which Iran could build a power plant and develop a grid that could lead to Turkey and then to Europe. Since production in the region is often cheaper through government subsidies, the electricity can be bought cheaply in the region and then sold at a higher price outside the region.

Gulf Countries

New plans from Iran aim at expanding its regional role across the Persian Gulf including the United Arab Emirates, Oman, and Qatar through development of the Forouz B gas field in the Gulf. The Iran Offshore Oil Company struck a US\$3.8 billion deal with MAPNA to develop a power plant based on the natural gas field's generating an estimated 3,000 MW of electricity, which would be exported mostly to these Gulf countries.⁴⁹

Bypassing Sanctions and Leveraging New Opportunities

In the past few years, the EU and the United States have relied on policies of political and economic isolation, assuming that in the long term Iran will be forced to give in to their demands regarding the country's potential nuclear aspirations. Iran's energy sector has been a particular target. It cannot be denied that the sanctions have had an impact since mid-2012. According to the International Energy Agency, Iranian exports of crude oil were estimated at 1.3 million barrels per day in November 2012, down from nearly 2.3 million in the same period the previous year. Some sources even state that with the European sanctions in July 2012, sales of Iranian crude oil to Asian customers have decreased between 10 to 30 percent. The Iranian oil minister, Rostam Qasemi, said that Iran experienced a 40 percent decrease in oil sales and a 45 percent decrease in repatriating oil money in the last nine months of 2012.⁵⁰ Even President Mahmoud Ahmadinejad acknowledged that

sanctions have pressured the Iranian economy significantly—but not crippled it. Despite losses in Iran's energy sector due to European sanctions, it has not stopped the country from pursuing alternative ways of utilizing its energy sector to expand its regional influence.

The United States, meanwhile, has actively encouraged its regional allies to adhere to the sanctions imposed against Iran. As a result, some countries in Iran's neighborhood have adopted pragmatic policies that often send mixed signals: they strengthen economic ties with Iran yet simultaneously reduce energy imports from Iran.

European and U.S. sanctions do not currently affect electricity export agreements or the construction of long-term regional grids. They are an alternative outlet for Iran's extensive natural gas reserves that not only avoids sanctions but also supports Iran's long-term regional aspirations. The extent of Iran's regional electricity exports does not make up for the losses in crude oil and natural gas trade. Nonetheless, these agreements complicate the potential impact of sanctions on Iran, underline Iran's regional geopolitical importance, and make adherence to the sanctions more costly for the United States and Europe as they have to actively offer alternatives or issue threats to those countries seeking cooperation with Iran in this sector.

Iran's geopolitical relevance, between the Caspian Sea and the Persian Gulf, ensures both significant energy sources and access to important trade routes. With the looming sanctions and an opportunity to gain regional influence, Iran in the past decade has turned more vigorously toward trade with countries in the Eurasia region. Its strategy to push against the isolation policies essentially focuses on the development of close regional dependencies. While these dependencies are certainly not one-sided (for example, Iran's dependence on Chinese investments, Turkish goods, and so on), it is important to consider the influence Iran is gaining in a geopolitically relevant region. The electricity sector proves to be an interesting and understudied sector in which Iran has demonstrated its willingness to further its regional aspirations. While the general trade of goods can be replaced—at a certain cost—the construction of transmission lines and other needed infrastructure for the supply of electricity suggests a long-term commitment between the countries. Iran has thus laid the foundation for important future cooperation and influence in the region. At first glance, this does suggest a backlash to the envisioned Western policy of isolating Iran from the region and the international community.

Europe and the United States are thus forced to recognize that they have to face an Iran that is prominently pursuing a strategy of regional integration to increase its influence. Despite its successes, Iran is struggling to maintain its regional influence as countries are caught between their support for the West or Iran, giving the West an opportunity to cross Iran's "game" but also making sanctions more expensive as the West has to actively "woo" regional allies. Iran's foreign minister, Ali Akbar Salehi, made remarks during a presentation at the German Foreign Council in

Berlin in February of 2013 that once again indicated Iran's openness to bilateral negotiations with the United States but stress that these talks have to be conducted on the same "eye level."

The sincerity of Iran's openness can certainly be questioned. Nonetheless, it points to a crucial development that the West has chosen to disregard—Iran is not being isolated but is a power with irrefutable regional influence. While the energy sector has been sanctioned and trade between Iran and the West has been greatly limited, the electricity sector, which is less easily sanctioned, may grow into an alternative energy outlet and source of regional influence for Iran. **SD**

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